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Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, D.C. 20554-0005

In the Matter of )  
 )  
Digital Audio Broadcasting Systems )  
And Their Impact on the Terrestrial ) MM Docket No. 99-325  
Radio Broadcast Service )

To: The Commission

**APPLICATION FOR REVIEW**

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## SUMMARY

I apply for review of a recent Order issued by Media Bureau on delegated authority. This Order makes a substantial, across-the-board modification to the digital FM radio (IBOC) transmission standard by permitting broadcast powers up to ten times what had been previously allowed. I ask that the full Commission vacate said order and remand the matter back to Media Bureau with instructions.

Three factors warrant Commission review. First, Media Bureau exceeded its delegated authority. The authority cited pertained to “routine petitions and waivers,” and “to allow broadcasters to take advantage of technical improvements as they develop.” The issue considered was anything but routine and neither was it responsive to a recent technical improvement. Media Bureau simply overruled the prior judgment of the Commission and made sweeping changes to the *de facto* service areas of all FM broadcasters, not just those engaged in digital broadcasting.

Second, notwithstanding the fact that the Order was *ultra vires*, the action taken is in conflict with established Commission policy and case precedent. The authority cited was conditioned on “appropriate notice and comment,” but manner in which this Order was adopted was not appropriate. This Order derives in large part from the NPR “Report to the FCC on the Advanced IBOC Coverage and Compatibility Study,” which was not put out for public comment. This constitutes reversible error because it is judicially well established that the APA notice and comment requirement mandates that the technical studies and data upon which an agency relies in its rulemaking be made available for public evaluation. Indeed, the Order spends an inordinate amount of effort analyzing two *ex parte* comments filed in response to the NPR Study. These *ex parte* comments both disagreed with the outcome of the NPR study, and each other. It would seem obvious that such a divergence in analysis—and the need for the delegated

authority to give it special focus in the Order—is exactly why public comment must be solicited. Public comment is the crucible in which the most critical factual material used by an agency in its rulemaking is examined and tested, to ensure the integrity of agency action.

Third, notwithstanding the aforementioned deficiencies, Media Bureau consideration of this issue is plainly premature—there are prerequisite questions of law and policy that have not been resolved by the Commission. Following adoption of the *Second Report and Order* (MM Docket No. 99–325) two petitions for reconsideration (PRFs) were filed with the Commission that bear upon the instant matter. Neither has yet been decided.

One petition was concerned with the increased spectrum footprint required for digital broadcasting. It asked, *inter alia*, for the Commission to consider explicitly whether certain incumbent licensees should be simply granted access to additional spectrum, or whether competing demands for this spectrum should be resolved, e.g., through auction under authority of Section 309(j) of the Communications Act. In the present Order, Media Bureau grants access to up to ten times as much additional spectrum as previously allowed, effectively deciding on behalf of the full Commission that an auction or other manner of competition is not required.

The other petition was mine, and it concerned the propriety of the digital broadcasting standard that the Commission had adopted. For several important reasons, I protested the adoption of a “standard” that was, in fact, secret. I explained the related need to pause the digital transition until we had full disclosure of a complete technical specification, or a process that would result in such. Here Media Bureau, after further agency consideration, concludes the opposite—that the digital transition is not occurring fast enough. If allowed to stand the Order would evidence exhaustion of administrative remedy in the matters of the PRFs, which necessitates full Commission review of the Order.

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To: The Commission

**APPLICATION FOR REVIEW**

**I. INTRODUCTION AND OVERVIEW**

1. My name is Jonathan E. Hardis, and pursuant to § 1.115 of the Commission's rules, I represent myself before the Commission to apply for review of a recent Order adopted by Media Bureau under delegated authority in the above captioned proceeding.<sup>1</sup> The *Order* adopts modifications to § 73.404(a) of the Commission's rules to permit digital broadcasting on the FM band at powers up to ten times that previously allowed.

2. This application for review presents three questions to be decided. **First**, is the *Order* within the scope of the authority delegated to Media Bureau? I demonstrate that it is not, which warrants full Commission consideration under § 1.115(b)(2)(i), conflict with established Commission policy. Secondly, this warrants consideration under § 1.115(b)(2)(iv), an erroneous finding as to an important and material question of fact, since the Order is based on a mistaken interpretation of § 73.317 of the Commission's rules. **Second**, did Media Bureau follow

<sup>1</sup> DA 10-208, Adopted January 27, 2010, Released January 29, 2010. Electronically at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DA-10-208A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-10-208A1.pdf). Hereinafter, the "*Order*." See also 75 FR 17874, April 8, 2010. This Application for Review was previously filed March 17, 2010. Notwithstanding § 0.283(b) of the Commission's rules and the fact that March 17 is within 30 days of April 8, on April 6, 2010, the March 17 filing was dismissed without prejudice as being premature (DA 10-599). This Application for Review is refilled today under protest.

appropriate procedures for notice and comment prior to adopting final rule changes? I demonstrate that they did not, which warrants full Commission consideration under § 1.115(b)(2)(i) because Commission policy is to abide by the Administrative Procedure Act<sup>2</sup> and pertinent case law. Secondly, this warrants Commission consideration under § 1.115(b)(2)(v), prejudicial procedural error. **Third**, is the *Order* premature as it prejudices consideration of two petitions for reconsideration (PFRs) that the full Commission has not yet decided? I demonstrate that it is, because adoption of the *Order* would evidence exhaustion of administrative remedies prior to explicit Commission findings on issues of fact and law. This warrants full Commission consideration under § 1.115(b)(2)(ii) because the *Order* involves questions of law and policy that have not previously been resolved by the Commission. I am most aggrieved in connection with this third issue as I filed one of the PFRs. However, the Commission must decide the first two questions prior to reaching the third, as a relevant finding would make the third moot.

3. In consideration of the facts and law, I ask that the Commission vacate the *Order* and remand the issue back to Media Bureau with instructions. Were the third question the only one at issue, a stay of the *Order* until the Commission decides the PFRs might be sufficient. However, while a stay is in effect Media Bureau would have time for additional notice and comment. This makes vacating the *Order* the preferred option. To the first question, Media Bureau should be instructed to merely recommend action for full Commission consideration.

4. The instant *Order* grew out of a petition filed by a consortium of broadcasters and others identifying themselves as the Joint Parties.<sup>3</sup> I consider certain active and involved commenters as intervenors for purposes of service under § 1.115(f).

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<sup>2</sup> See 5 U.S.C. § 500 *et seq.*, hereinafter “APA”

<sup>3</sup> See Letter from Steven A. Lerman and John W. Bagwell, on behalf of the Joint Parties (American Public Media Group, et al.), June 10, 2008, MM Docket No. 99–325, electronically at <http://fjallfoss.fcc.gov/ecfs/document/view?id=6520027716>.

## II. MEDIA BUREAU OVERSTEPPED THE BOUNDS OF ITS DELEGATED AUTHORITY

### A. Background

5. The underlying subject of the *Order* is the broadcast power allowed for so-called In-Band On-Channel (IBOC) digital radio broadcasting.<sup>4</sup> While IBOC technology was being developed in the 1990s, engineering studies were performed to determine the optimum proportion of digital broadcast power, relative to analog broadcast power. These studies determined the correct ratio to be –22 dB.<sup>5-6</sup> Informed by these studies, the NRSC<sup>7</sup> conducted its own evaluation of the IBOC system. Rather than testing at –22 dBc, they tested at 58% higher power, –20 dBc.<sup>8</sup> At this higher power, “NRSC test results indicate that hybrid FM IBOC digital coverage is comparable to analog coverage along radial and loop routes tested. Due to FM IBOC’s improved resistance to various types of interference (co- and adjacent channel, impulse noise, and multipath fading in particular), FM IBOC service may be available in areas where analog service

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<sup>4</sup> IBOC digital radio is perhaps better known by its brand name, “HD Radio,” a trademark of iBiquity Digital Corporation.

<sup>5</sup> See, e.g., “Analysis of the DAB to first adjacent interference at the edge of coverage showed that the total DAB signal should be set about –22 dB relative to its FM power,” in *Robust IBOC DAB AM and FM Technology for Digital Audio Broadcasting*, Brian W. Kroeger, D.Sc. and Paul J. Peyla, 51<sup>st</sup> Annual Broadcast Engineering Conference, April 9, 1997; reprinted as Appendix 12 of R-3 (Audio Systems) Committee, DAR Subcommittee, Technical Evaluations of Digital Audio Radio Systems – Laboratory and Field Test Results, Final Report, December 1997; included in CEMA Comments in RM-9395, electronically at <http://fjallfoss.fcc.gov/ecfs/document/view?id=6005940352>. Dr. Kroeger is today the Chief Scientist at iBiquity.

<sup>6</sup> Decibels (dB) denote power ratios on a logarithmic scale. Decibels expressed as “dBc” explicitly denote ratios with respect to “carrier” power, here meaning “analog” power. –22 dB means a digital/analog power ratio of approximately 1:160. –20 dB means 1:100, –14 dB means 1:25, and –10 dB means 1:10. These numbers are equivalently expressed as digital power as a percentage of analog power—in these examples 0.6% (approximate), 1%, 4%, and 10%, respectively. In dB, higher digital powers are “less negative,” so while it may be confusing at first, the *smaller* the absolute value of the number, in dBc, the *higher* the power.

<sup>7</sup> The National Radio Systems Committee (NRSC) develops voluntary consensus standards under the sponsorship of the National Association of Broadcasters (NAB) and the Consumer Electronics Association (CEA). CEA was formerly known as CEMA.

<sup>8</sup> See “*Evaluation of the iBiquity Digital Corporation IBOC System, Part 1 – FM IBOC*,” November 29, 2001, at Table 3, <http://fjallfoss.fcc.gov/ecfs/document/view?id=6512974101>.

is currently of unacceptable quality due to such interference.”<sup>9</sup> More specifically, “In general, these results demonstrate that the ‘digital’ service area of a radio station broadcasting FM IBOC should be an improvement with respect to existing analog service, due primarily to FM IBOC’s robustness in the presence of multipath fading.”<sup>10</sup> These findings were uncontested during public comment, and in its *First Report and Order*, the Commission accepted that:<sup>11</sup>

The NRSC concluded that the FM IBOC system was more robust than analog in most cases, and performed markedly better in overcoming multipath interference. The NRSC also found that “the ‘digital’ service area of a radio station broadcasting FM IBOC should be an improvement with respect to existing analog service.”

Until the recent *Order*, –20 dBc had been the standard power level for digital transmission for over seven years. However, beginning in 2007, iBiquity and certain broadcasters using the IBOC system have pressed for authorization for yet higher broadcast power, primarily on claims that digital coverage did not replicate analog coverage. The *Order* documents the sequence of events.

6. In the *Order*, Media Bureau acted under delegated authority. Delegated authority was granted in the *Second Report and Order*<sup>12</sup> in response to the pace of technical development of the IBOC system. “The IBOC DAB service is developing rapidly, with new modes of operation such as multicasting, datacasting, and dual antenna operation all commencing after the [*First Report and Order*] was adopted.”<sup>13</sup> Even though each of these new features posed a very minor issue, the press of other Commission business delayed their deployment. Since the Commission

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<sup>9</sup> *Id.*, Section 4.5.9, at page 43.

<sup>10</sup> *Id.*, at page 31.

<sup>11</sup> See, “Digital Audio Broadcasting Systems and Their Impact on the Terrestrial Radio Broadcast Service,” First Report and Order, at 13, 17 FCC Rcd 19990 (2002) (“*First Report and Order*”); electronically at [http://fjallfoss.fcc.gov/edocs\\_public/attachmatch/FCC-02-286A1.pdf](http://fjallfoss.fcc.gov/edocs_public/attachmatch/FCC-02-286A1.pdf).

<sup>12</sup> See, “Digital Audio Broadcasting Systems and Their Impact on the Terrestrial Radio Broadcast Service,” Second Report and Order, First Order on Reconsideration and Second Further Notice of Proposed Rule Making, 22 FCC Rcd 10344 (2007) (“*Second Report and Order*”); electronically at [http://fjallfoss.fcc.gov/edocs\\_public/attachmatch/FCC-07-33A1.pdf](http://fjallfoss.fcc.gov/edocs_public/attachmatch/FCC-07-33A1.pdf).

<sup>13</sup> *Second Report and Order, Id.*, at 99; 22 FCC Rcd 10344, 10383.

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believed that the IBOC system would “continue to evolve rapidly,” “in the interest of efficiency” delegated authority was granted, “to allow broadcasters to take advantage of technical improvements as they develop, rather than waiting for Commission action and rules to do so.” “After appropriate notice and comment, the staff is authorized to act on delegated authority on implementing new IBOC notification procedures to cover new IBOC configurations.”<sup>14</sup> The Ordering Clause granted the Chief of Media Bureau authority to, “consider and grant routine petitions and waivers of the Commission’s DAB technical requirements,” etc.<sup>15</sup>

**B. Discussion**

**1. The subject matter of the *Order* does not fit the subject matter that was delegated**

7. The instant *Order* clearly exceeds the bounds of delegated authority. The *Order* was not in response to any technical improvement or new “mode of operation,” as that term has been used consistent with the examples provided. Multicasting, datacasting, and other prospective new modes of operation (e.g., surround sound) affect the data content of the bit stream, but not the occupancy of spectrum. All the cited examples of “modes of operation,” including permitted antenna configurations, present, as common characteristic, little or no change in spectrum use and therefore little or no impact on the use of spectrum by others. Furthermore, the *Order* does not fill any gap prior to full Commission consideration of an issue. On the issue of allowed broadcast power, the Commission decided the matter in 2002. Here, Media Bureau simply overrules the Commission, substituting one judgment for another.

8. The question addressed by the *Order* is anything but routine. The proposition of a ten-fold power increase, to put it bluntly, is primarily a gambit to occupy spectrum that would otherwise be put to other uses. Even the most casual observer of spectrum allocations under-

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<sup>14</sup> *Id.*

<sup>15</sup> *Second Report and Order, Id.* at 132; 22 FCC Rcd 10344, 10395.

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stands that factors of ten in broadcast power are categorical differences, not small tweaks to adjust reception boundaries. (In common experience, we all well know that a 500 watt station is fundamentally different than a 5,000 watt station, which in turn is fundamentally different than a 50,000 watt station.) Here, the remedy (a massive power increase) is vastly disproportionate to the supposed problem. While, after careful consideration, the Commission might determine that digital broadcasting is indeed the best use for the spectrum at issue, that is not a decision that has been delegated to Media Bureau.

**2. The *Order* redistributes rights to spectrum use, exercising prerogatives reserved to the full Commission**

9. The *Order* easily crosses the line from being an exercise of authority to expeditiously deploy new IBOC features to being an infringement of authority to decide allocation of spectrum among competing interests.<sup>16</sup> It falls to the Commission, not a delegated authority, to make the policy decisions on how this spectrum should be shared among those who want access.

**a) IBOC broadcasting does *not* fit the spectrum mask of § 73.317**

10. The *Order* is built atop two faulty premises, which are found both in the *Order* and in previous documents on this docket. The first is that hybrid digital broadcasting fits within the emission limits prescribed in § 73.317 of the Commission's rules, the so-called "spectrum

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<sup>16</sup> Among the many comments received indicating competing interests in the spectrum at issue were those of Educational Media Foundation, December 5, 2008, <http://fjallfoss.fcc.gov/ecfs/document/view?id=6520190210>; WNYC Radio, December 5, 2008, <http://fjallfoss.fcc.gov/ecfs/document/view?id=6520190201>; National Translator Association, December 5, 2008, <http://fjallfoss.fcc.gov/ecfs/document/view?id=6520190174>; Prometheus Radio Project, National Federation of Community Broadcasters, and New America Foundation, December 5, 2008, <http://fjallfoss.fcc.gov/ecfs/document/view?id=6520190157>; Talley Broadcasting Corporation, December 5, 2008, <http://fjallfoss.fcc.gov/ecfs/document/view?id=6520190136>; Minnesota Public Radio, December 4, 2008, <http://fjallfoss.fcc.gov/ecfs/document/view?id=6520189806>; KAVV (FM), December 1, 2008, <http://fjallfoss.fcc.gov/ecfs/document/view?id=6520189395>; Marshfield Broadcasting Company, Inc., November 29, 2008, <http://fjallfoss.fcc.gov/ecfs/document/view?id=6520189362>; Press Communications, LLC, July 17, 2009, <http://fjallfoss.fcc.gov/ecfs/document/view?id=7019808368>; and New Jersey Broadcasters Association, January 21, 2010, <http://fjallfoss.fcc.gov/ecfs/document/view?id=7020383697>.

mask.” While it has been often repeated that IBOC broadcasting is “within the spectrum mask,”<sup>17</sup> many repetitions do not make this statement correct—it is not.<sup>18</sup> The *Order* is based on a mistaken belief that digital broadcast powers even as high as –10 dBc are consistent with the Commission’s FM emissions mask,<sup>19</sup> and this in and of itself is sufficient grounds for Commission review.<sup>20</sup> I fully realize that this aspect of the IBOC system has been widely misunderstood since its first deployment, and that to overcome ingrained notions irrefutable proof is necessary. I will proceed to provide it. In a related issue and as a further challenge to preconceived notions, I should point out that in the IBOC system that was ultimately deployed, the digital signal is not “on channel,” as channels are defined in the Commission’s rules.<sup>21</sup> In the hybrid digital mode, the *entire* digital signal is placed in the channels adjacent to one that the analog signal occupies. “IBOC” is actually a misnomer.

11. Both of these fallacies are pivotal to an argument that the spectrum needed for IBOC broadcasting has already been allocated to incumbent broadcasters. However, the argument fails for the want of a valid premise. The spectrum allocated for use of FM broadcasters actually derives from the Commission’s technical standards for the FM signal and its modulation (e.g., § 73.1570, § 73.310, § 73.319, § 73.322, etc.). The radio spectrum required to accommodate such signals is determined mathematically from these specifications (e.g., using Fourier transforms), with minor variation arising from the spectral content of the audio signals being

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<sup>17</sup> See, e.g., § 73.402(c), defining the term “Hybrid DAB System” as one that transmits both the digital and analog signals within the spectral emission mask of a single AM or FM channel.

<sup>18</sup> As explained in § 17 *infra*, IBOC as originally conceived kept digital signals within the spectrum mask. However none of the systems tested or deployed within the last dozen years did so.

<sup>19</sup> *Order, Id.*, at 4.

<sup>20</sup> Here, subordinate to the issue that the *Order* itself was issued outside of delegated authority

<sup>21</sup> See § 73.201. A “channel” is 200 kHz of spectrum, a center frequency  $\pm 100$  kHz. This point is disputed by those who say that § 73.317 define “channels” rather than § 73.201. However, this argument finds no support in the text of the two rules, and it also requires an interpretation of § 73.317 that is contrary to its purpose and plain meaning, as discussed in §§ 12–18 *infra*.

transmitted. Nonetheless, real-world transmission apparatus have non-linear and other non-ideal characteristics that cause spectrum to be employed over and above what the mathematics of signal modulation dictate. These are referred to as spurious and harmonic emissions.

12. § 73.317 is the contemporary descendant of regulation intended to minimize spurious and harmonic emission. The *FM Standards of Good Engineering Practice* of the 1950s were codified in 1955, requiring, “Spurious emissions, including radio frequency harmonics, shall be maintained at as low a level as practicable at all times in accordance with good engineering practice.”<sup>22</sup> The numerical limits as we know them today were first adopted in 1959.<sup>23</sup> They were then state-of-the-art for the vacuum tube transmitters of the era, and they set the threshold for spurious and harmonic emissions that would trigger enforcement action.<sup>24</sup> Nonetheless, in the event that harmful interference was created at even lower thresholds, the regulation required (as § 73.317 does now) that the problem be corrected promptly.

13. In the intervening 50 years, transmitter technology has been much improved—so much so that we can now contemplate doing something that was never intended when § 73.317 was first adopted: *deliberately* radiating off-channel. We might proceed cautiously to *reinterpret* the specifications in § 73.317 as an allowance for intentional radiators. However, § 73.317 was adopted to deal with *narrowband* spurious and harmonic emission, and its careless application to intentional *broadband* emission can easily lead to faulty conclusions.<sup>25</sup>

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<sup>22</sup> See § 3.317(f)(2), 20 FR 9041, 9101.

<sup>23</sup> See amendments to § 3.317, 24 FR 7274, 7275.

<sup>24</sup> A grandfather clause, which is still on the books, permitted continued use of older transmitters that did not meet the new specification.

<sup>25</sup> See, e.g., “the RF emission mask was never intended to apply to intentional insertion of continuous signals, but rather to protect from unintentional spurious and sporadic signals from FM composite modulation,” R-3 (Audio Systems) Committee, DAR Subcommittee, Technical Evaluations of Digital Audio Radio Systems – Laboratory and Field Test Results, Final Report, December 1997, at p. 26; included in CEMA Comments in RM-9395, electronically at <http://fjallfoss.fcc.gov/ecfs/document/view?id=6005940349>.

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14. Using § 73.317 to validate the digital power levels under discussion requires stretching its meaning to the breaking point. § 73.317(b) specifies that, “Any emission appearing on a frequency removed from the carrier by between 120 kHz and 240 kHz inclusive must be attenuated at least 25 dB below the level of the unmodulated carrier,” that is, –25 dBc. However, the 2002 standard for digital power is –20 dBc, which is 5 dBc greater, and the *Order* allows yet higher powers. How could this possibly fit the mask? As it happens, the IBOC digital signal, in the hybrid digital mode, consists of 382 individual subcarriers removed from the analog carrier by 129 kHz to 199 kHz.<sup>26–27</sup> Each of these subcarriers individually has a power of –45.8 dBc<sup>28</sup> to keep their sum at –20 dBc.<sup>29</sup> The claim that the digital transmission “fits the mask” considers each of the 382 subcarriers *individually* (at –45.8 dBc), rather than all 382 *in total* (at –20 dBc).

15. An alternative, and perhaps more common way of constructing this claim is aided by use of spectrum analyzers. The 382 subcarriers are spaced about 0.363 kHz apart, commensurate with their individual bandwidths. Each 1 kHz slice of spectrum contains about 2.75 subcarriers, with each 1 kHz slice *individually* below –25 dBc (at about –41.4 dBc, since  $10 \log(2.75)$  is 4.4). It has become common (if erroneous) practice to use spectrum analyzer displays showing *many individual data points (of power in 1 kHz slices)* below –40 dBc to infer that § 73.317 is satisfied. (After all, –40 is less than –25, isn’t it?) Of course, nothing in § 73.317 allows one to slice up spectral peaks into thin 1 kHz strips (or thin strips of any other width), and to consider

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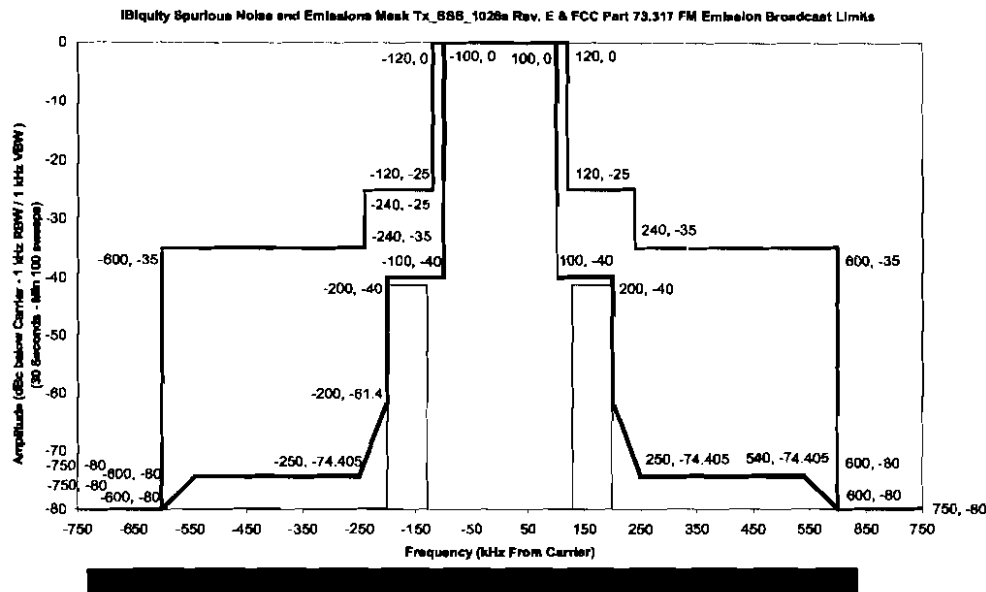
<sup>26</sup> See Doc. No. SY\_IDD\_1011s rev. F, HD Radio™ Air Interface Design Description - Layer 1 FM, iBiquity Digital Corporation, August 7, 2007, at Table 5-1; electronically at <http://www.nrscstandards.org/download.asp?file=NRSC-5-B.asp>

<sup>27</sup> In the extended hybrid modes, the number of carriers and the power calculations differ.

<sup>28</sup> See Doc. No. SY\_SSS\_1026s rev. E, HD Radio™ FM Transmission System Specifications, iBiquity Digital Corporation, January 30, 2008, at Table 4-3; electronically at <http://www.nrscstandards.org/download.asp?file=NRSC-5-B.asp>

<sup>29</sup>  $10 \times \log(382) \approx 25.8$ , which is difference between an individual carrier power, in dB, and the total power, in dB. In logarithms, multiplication (by 382) becomes addition (by 25.8).

each slice separately. The illustration below exemplifies this fallacious mode of presentation.<sup>30</sup>



**Figure 1 - FM Hybrid IBOC Spectral Test Mask @ -20 dBc**

Here, the thin blue curve<sup>31</sup> is illustrative of the power spectral density of IBOC subcarriers at  $-41.4 \text{ dBc/kHz}$ . It is shown to be less than red curve, which is illustrative of the “iBiquity Mask” and  $-40 \text{ dBc/kHz}$  in the relevant portion of the plot. It, in turn, is shown to be less than the green curve, labeled as “FCC R&R 73.317” and drawn at a level of  $-25$  in the relevant portion of the plot. However, the units of measurement in § 73.317 are dBc, not dBc/kHz. This is literally an “apples and oranges” comparison of unlike things—power, and power spectral density respectively. The green line, as plotted, means “dBc in a thin, 1 kHz slice of spectrum at the frequency shown on the x axis,” which is not at all how § 73.317 is framed.

16. On an interpretation of § 73.317 that each subcarrier *individually* would be allowed  $-25 \text{ dBc}$ , the *total* digital power allowed in the adjacent channels could be as high as

<sup>30</sup> From “FM HD Radio™ System Performance At Elevated Carrier Levels,” June 30, 2009, Charles River Broadcasting Co. and iBiquity Digital Corp., filing of WKLB-FM, MM Docket No. 99–325, July 6, 2009; at <http://fjallfoss.fcc.gov/ecfs/document/view?id=7019808319>.

<sup>31</sup> Color may be seen in the original PDF document at the link cited, and in the PDF of this document as filed on the ECFS.

+0.8 dBc, or 20% greater than the analog carrier itself. Obviously this is neither the meaning nor the intent of the rule. The purpose of the rule is to limit emissions that could interfere with stations on adjacent channels, and it makes little difference if the emission power is sharply peaked or spread out. *Total* emission is the only interpretation consistent with the purpose of the rule.

17. That § 73.317 refers to total power is further validated by the historical record. During the early development of IBOC the intent was, indeed, to keep the entire digital signal below –25 dBc and thus within the mask and arguably “on channel.” *See, e.g., U.S. Patent No. 5,465,396, In-band on-channel digital broadcasting, U.S. Patent No. 5,757,854, In-band on-channel digital broadcasting, and U.S. Patent No. 6,510,175, In-band on-channel digital broadcasting*, all of which say, “FCC 73.317 defines the spectral allocation for commercial FM in the United States over a 1.2 MHz bandwidth. Compliance with FCC 73.317 allows the power within 480 kHz of this bandwidth to reach 25 dBc.” [*sic*, –25 dBc meant] “The following broadcast parameters have been chosen for IBOC-DAB: ... MODULATION SPECTRUM: Complies with FCC 73.317. ... FCC 73.317 requires that transmitted power between ±120 and ±240 kHz be below –25 dBc. The scheme described transmits DAB power at –28 dBc, leaving a 50% margin.” This is explicit recognition that § 73.317 requires *total* power between 120 kHz and 240 kHz off carrier to be below –25 dBc.

18. Similarly, iBiquity (then USADR) got the matter right in their initial Petition for Rulemaking.<sup>32</sup> iBiquity recognized that § 73.317 would not apply to digital broadcasting, for which they proposed the Commission adopt a new and different spectral mask. “In order to ensure compatibility in an IBOC DAB world, several emission masks will be necessary. First, the current analog emissions mask as defined in Sections 73.317 and 73.44 of the Commission’s

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<sup>32</sup> *See, USA Digital Radio, Petition for Rulemaking*, October 7, 1998 (RM-9395); available electronically at <http://fjallfoss.fcc.gov/ecfs/comment/view?id=217027>.

rules for FM and AM, respectively, would continue to apply to all stations as long as they transmit in an analog-only mode. Second, any FM station that simultaneously transmits analog and digital signals in the hybrid mode will be required to meet a new FM hybrid mask for the combined analog and digital transmissions.”<sup>33</sup> The proposed new hybrid-mode emission mask had proper units of measurement for broadband digital transmission (dBc/kHz) and allowed higher total power. The proposed rule, hypothetically numbered § 73.325(b)(i), said in part, “The measured power spectral density of the analog and digital signals at frequencies removed from the center of the channel between 100 kHz and 200 kHz must not exceed –40 dBc/kHz.”<sup>34</sup> As previously noted, this corresponds to –20 dBc, with slight margin for engineering tolerance.

19. In reality, if many broadcasters routinely transmitted in broadband up to the limit allowed by § 73.317, but in each of many narrowband intervals, it would cause bedlam on the band. During the course of the proceeding leading up to the *Order* iBiquity admitted as much. iBiquity was deeply critical of the NPR DRCIA Project Report,<sup>35</sup> arguing, “the NPR Report represents a worst case scenario with every station in the country converted to digital and operating at the –10 dBc level. Currently, only 15% of the stations in the country have converted to digital broadcasts at existing power levels.”<sup>36</sup> This seems as good an argument as any that (1) higher digital powers are not scalable to all broadcast stations because too much harmful interference would be created, and (2) higher digital powers would work in the near term only by giving preferential spectrum access to 15% of broadcast stations at the expense of the other 85%. This is a policy decision that the Commission itself would have to make.

<sup>33</sup> *Id.*, at p. 86 electronically at <http://fjallfoss.fcc.gov/ecfs/document/view?id=2170270004>.

<sup>34</sup> *Id.*, at Appendix A, p. 3; <http://fjallfoss.fcc.gov/ecfs/document/view?id=2170270005>.

<sup>35</sup> See, “Report to the Corporation for Public Broadcasting, Digital Radio Coverage & Interference Analysis (DRCIA) Research Project,” May 19, 2008; electronically at <http://fjallfoss.fcc.gov/ecfs/document/view?id=6520034764>.

<sup>36</sup> See, e.g., “Comments of iBiquity Digital Corporation,” MM Docket No. 99-325, December 5, 2008; electronically at <http://fjallfoss.fcc.gov/ecfs/document/view?id=6520190064>.

20. Of course, notwithstanding § 73.317, the Commission is free to authorize any digital power level it wishes, after having been informed by relevant data and having conducted reasoned analysis. However, § 73.317 itself provides no technical justification for any power level greater than –25 dBc *in total*. –20 dBc (the 2002 standard allowed by § 73.404) is greater than § 73.317 allows, but is at least close. The higher power levels adopted by the *Order* (–14 dBc to –10 dBc) are way out of the ballpark, and in no way consistent with § 73.317.

21. Nowadays, § 73.317 is often cited by petitioners seeking to perpetuate a myth that IBOC hybrid digital signals fall within spectrum allocations that broadcasters have always enjoyed. This myth is fed by misconstruing the Commission when it said, “the iBiquity system ... allows the introduction of DAB service with no additional allocation of spectrum.”<sup>37</sup> This is true in the aggregate when contrasting the iBiquity system to the other alternatives proposed for terrestrial digital radio broadcasting, including reallocation of L band (e.g., for Eureka 147) or reallocation of spectrum used for television in the past. It is not true, however, for individual broadcasting stations operating within the FM band. It is simply a misrepresentation of § 73.317 to suggest that it evidences a preexisting allocation of spectrum for an individual broadcasting station that is sufficient for its digital broadcasting needs—more specifically, an allocation that allows higher digital powers than those in use now. In point of fact, in order to commence hybrid digital transmission at even the –20 dBc level, a broadcaster required Commission authorization to occupy new and additional spectrum *outside* of the bounds allowed by § 73.317. Higher levels, such as those being contemplated now, would require exceeding this specification even more. At ten times the power as before, hybrid digital broadcasters would occupy ten times as much new spectrum in the adjacent channels.

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<sup>37</sup> *First Report and Order, Id.*, at 15; 17 FCC Rcd 19990, 19995.

**b) The Commission has not authorized the additional interference that would arise from higher digital power**

22. The second faulty premise is that the Commission has already permitted the additional harmful interference that would be caused by higher digital power. In fact, it has not. This premise arises from the fact that, under the Commission's regulatory scheme, broadcasters are only protected from interference within a specific contour, based on field strength.<sup>38</sup> However, the converse to this is not true. A boundary of interference protection does not create a right to interfere outside of it. Broadcasters are also protected from interference absent a reasoned Commission decision permitting it. As the Commission well knows, FM signals are quite serviceable and valuable to the public outside of their protected contours.<sup>39</sup> It is the Commission's prerogative to weigh the relative public-interest benefits of maintaining FM reception beyond the protected contour against other potential uses, including new entrants (at various power levels), digital services, and unlicensed use.

23. In the case of hybrid digital broadcasting, in the *First Report and Order* the Commission decided the amount of allowed interference outside of protected contours.<sup>40</sup> It is a misrepresentation of the Commission's decision that allowance for "*some* additional interference" [emphasis added] is license for "*any* additional interference." The Commission was presented with facts indicating, "a limited number of listeners may perceive an impact outside of the protected contour under certain conditions." As a result, the Commission concluded that, "Under the circumstances, we agree with the NRSC and the majority of commenters that some additional interference outside a station's protected contour is an acceptable tradeoff given the larger public

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<sup>38</sup> *First Report and Order, Id.*, at 14–15; 17 FCC Rcd 19990, 19995.

<sup>39</sup> For example, Educational Media Foundation commented that 34.1% of the listeners that supported noncommercial EMF stations were from outside of their 60 dBµ contours. Comments of Educational Media Foundation, December 5, 2008; electronically at <http://fjallfoss.fcc.gov/ecfs/document/view?id=6520190210>

<sup>40</sup> *First Report and Order, Id.*, at 14–15; 17 FCC Rcd 19990, 19995.

interest benefits at stake.” On changing facts at higher broadcast power—a greater number of listeners receiving interference under a greater number of conditions—it remains the Commission prerogative to decide whether or not a new tradeoff would also be acceptable.

24. Furthermore, the Commission is charged with developing and implementing spectrum management policy. During this proceeding it came to light that an alternative means of improving digital reception was available, using single frequency networks (SFNs). NPR concluded that, “Digital radio lends itself naturally to SFN implementations. ... SFNs also present a means for filling in potential IBOC coverage shortfall, relative to FM coverage, in strategic and incremental approach.”<sup>41</sup> This highlights the distinction between a wireless service and the engineering approach chosen to deliver that service. It is the Commission’s prerogative to choose the engineering approach, consistent with its spectrum management goals. Here, at the outset of this proceeding, the Commission set two goals apposite to this discussion. First, “Our preference is for DAB systems that use the least spectrum.”<sup>42</sup> Promoting spectral efficiency is certainly a worthy goal. Second, “A viable system must minimize interference to analog AM and FM stations during that period when digital and analog service operate concurrently.”<sup>43</sup> “Minimizing” means what it says; it does not mean tolerating greater and greater interference from a DAB system that happens to have its foot in the door. As NPR reports, “Despite the costs to fill in IBOC DAB service, [SFN] repeaters are the recommended approach. When properly designed they can provide strategic improvement in communities, especially for indoor service,

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<sup>41</sup> National Public Radio, Report to the Corporation for Public Broadcasting, *Digital Radio Coverage & Interference Analysis (DRCIA) Project: Single Frequency Network Report*, Deliverable 6.1.4, January 21, 2008, at p. 21; available electronically at <http://fjallfoss.fcc.gov/ecfs/document/view?id=6520034767>.

<sup>42</sup> Notice of Proposed Rule Making in the Matter of *Digital Audio Broadcasting Systems And Their Impact On the Terrestrial Radio Broadcast Service*, MM Docket No. 99–325 (FCC 99–327) (“NPRM”), Nov. 1, 1999, at 17; <http://fjallfoss.fcc.gov/ecfs/document/view?id=6010350379>.

<sup>43</sup> NPRM (*Id.*) at 18.

without aggravating interference to neighboring stations. A simple increase in power ratio, as has been suggested by iBiquity, increases the interference to neighboring adjacent channel stations in an indiscriminate fashion.”<sup>44</sup> Indeed, the agreement reached between NPR and iBiquity commits the parties to, “work together to finalize the design and implement single frequency networks to fill gaps in digital coverage.”<sup>45</sup>

25. It is not my purpose here to argue the relative merits of SFNs as opposed to blanket power increase. Rather, it is my purpose to demonstrate the existence of two technical solutions for the same reported need. The choice between them is a policy choice that balances many factors, including maximizing the use and utility of FM spectrum among competing interests. I am confident that the Commission will concur that the authority to make this choice was not delegated either.

### 3. Conclusion

26. In summary, the instant issue presents substantial and non-routine questions of policy that go well beyond delegated authority. Should digital broadcasting be given new preference, both outside of protected contours and, as shown in § 34 *infra*, *inside* of protected contours? And if so, by how much? Should digital broadcasting be given new preference over secondary services on the FM band (LPFM and translators)?<sup>46</sup> Should digital coverage be improved through use of low-power repeaters (SFNs), or a blanket power increase? In each case, it is the Commission itself that must weigh the issue and decide it.

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<sup>44</sup> *Single Frequency Network Report (Id.)* at p. 20.

<sup>45</sup> See November 5, 2009, iBiquity/NPR letter to the Secretary, MM Docket No. 99–325, electronically at <http://fjallfoss.fcc.gov/ecfs/document/view?id=7020245744>.

<sup>46</sup> The *Order* itself deferred this question to the full Commission, at 22.

### III. COMMENT WAS NOT SOLICITED APPROPRIATELY PRIOR TO DECIDING THE ORDER

#### A. Background

27. Delegated authority in the *Second Report and Order* was conditioned on “appropriate notice and comment,”<sup>47</sup> and twice in the process leading up to the *Order* public comment was sought. In the first instance, comment was sought on a technical report prepared by iBiquity Digital Corporation that supported authorization of –10 dBc digital power levels, and various technical studies conducted by NPR, including the DRCIA research report that contradicted it.<sup>48</sup> The resulting comments were similarly polarized. As a result, NPR applied for, and received, a \$350,000 grant from the Corporation for Public Broadcasting to conduct an Advanced IBOC Coverage and Compatibility Study (AICCS). This study was designed to make new measurements of pertinent data and to recommend a course of action. Comment was again sought on a number of questions, including, “Whether the Bureau should defer consideration of the Joint Parties’ requested power increase until the completion of and comment on the further NPR studies?”<sup>49</sup> Most commenting parties answered in the affirmative, though the Joint Parties, iBiquity, and the NAB (among others) did not. On November 4, 2009, NPR added a AICCS report to the public record.<sup>50</sup> The next day, NPR and iBiquity put forward a joint proposal on the

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<sup>47</sup> *Second Report and Order*, *Id.* at 99; 22 FCC Rcd 10344, 10383.

<sup>48</sup> See, “Comment Sought on Joint Parties Request for FM Digital Power Increase and Associated Technical Studies,” MM Docket No. 99-325, Public Notice, DA 08-2340 (MB rel. Oct. 23, 2008); [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DA-08-2340A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-08-2340A1.pdf).

<sup>49</sup> See, “Comment Sought on Specific Issues Regarding Joint Parties’ Request for FM Digital Power Increase and Associated Technical Studies,” MM Docket No. 99-325, Public Notice, DA 09-1127 (MB rel. May 22, 2009); [http://fjallfoss.fcc.gov/edocs\\_public/attachmatch/DA-09-1127A1.pdf](http://fjallfoss.fcc.gov/edocs_public/attachmatch/DA-09-1127A1.pdf)

<sup>50</sup> See NPR *ex parte*, Nov. 4, 2009, <http://fjallfoss.fcc.gov/ecfs/comment/view?id=6015395377>. An expanded version (dated November 24, 2009) containing two additional chapters was later posted on-line at <http://www.nprlabs.org/publications/reports/20091218AICCSreport.pdf>.

power-increase matter.<sup>51</sup> By implication, this joint proposal formed the basis of the *Order*.<sup>52</sup>

Nonetheless, the *Order* declares the question on “completion and comment on the further NPR studies” as being “moot” because “NPR recently submitted its further test results.”<sup>53</sup>

28. Although comment was not solicited on the AICCS report, in the brief time between its release and the adoption of the *Order*, a few *ex parte* comments on the AICCS report were submitted. Two, referred to as “*MAP 2010 Ex Parte*” and “*Jurison Comments*,” received extensive consideration in the *Order*.

## **B. Discussion**

29. The Commission should need but the slightest reminder that the APA, and relevant case law, requires public comment on technical studies and data upon which an agency relies in its rulemaking. This was a pivotal issue in the recent case of *ARRL v. FCC* in the matter of Access Broadband over Power Line regulations, and the Court’s decision contains detailed discussion of the matter, which I incorporate herein by reference.<sup>54–55</sup> Here, no public comment was sought on the AICCS report, even though this study was commissioned precisely to inform on the issues surrounding the *Order*, and even though the *Order* ultimately traces to it. Accordingly, the Commission must vacate the *Order* and ensure an appropriate opportunity for comment on the AICCS report before deciding such rules.

30. It was arbitrary and capricious to declare the need for comment “moot.” The reason given, that “NPR recently submitted its further test results,” only pertained to half of the

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<sup>51</sup> See iBiquity/NPR *ex parte*, Nov. 5, 2009, <http://fjallfoss.fcc.gov/ecfs/document/view?id=7020245744>

<sup>52</sup> See, e.g., *Order*, *Id.*, at 17–19.

<sup>53</sup> *Order*, *Id.*, at Fn. 25.

<sup>54</sup> *American Radio Relay League, Inc. v. FCC*, 524 F.3d 227 (D.C. Cir. 2008) at pp. 12–20; electronically at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DOC-281787A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-281787A1.pdf)

<sup>55</sup> I note that Mr. William T. Lake was both on the brief for ARRL and the deciding official on the *Order*.

matter. It did not address the other half, the need for public comment once the results were submitted.

31. Even had it been permissible to go without comments, there was (and is) no urgency requiring a rush to rulemaking. True, the proponents of higher power predicted various dire consequences if their request was not granted immediately. “[C]oncerns about digital coverage will grow and new HD Radio products will continue to suffer from unnecessarily low digital power output. This will merely add uncertainty in the marketplace, which could have a detrimental impact on the roll-out of HD Radio technology.”<sup>56</sup> However, a skeptical reader would have noticed two things. First, much of their concern was based on the performance of first generation, low-cost consumer products. If experience teaches us anything it is that consumer products improve over time, even without Commission intervention. Second, the proponents were claiming simultaneously that power increases would occur slowly, over several years, and only to a limited extent. “[E]ven if there was an immediate demand to upgrade all FM radio stations, it would take several years to manufacture and install all the required equipment. Additionally, it is extremely unlikely that all stations currently broadcasting digitally will elect to increase power by 10 dB.”<sup>57</sup> Lacking “immediate demand,” and facing a several-year timeline, the success of IBOC technology could not possibly be dependant on rushed FCC action. Furthermore, as I pointed out in comment, the time being spent to analyze the issue was attributable, in large part, to the proponents’ own failure to allow comprehensive and impartial testing up-front, as they knew the Commission required.<sup>58</sup>

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<sup>56</sup> *Comments of iBiquity Digital Corporation*, July 6, 2009, at p. 7; electronically at <http://fjallfoss.fcc.gov/ecfs/document/view?id=7019808294>.

<sup>57</sup> *Id.* at p. 2.

<sup>58</sup> *Comments of Jonathan E. Hardis*, July 6, 2009, at pp. 2–4; electronically at <http://fjallfoss.fcc.gov/ecfs/document/view?id=7019808381>.

32. Apparently aware of its own deficiency, the *Order* granted significant consideration to the *MAP 2010 Ex Parte* and the *Jurison Comments*.<sup>59</sup> Both had argued that NPR had erred, but in opposite ways. One is left to infer that the AICCS report was validated because it occupied the middle ground. However, this belies the point. First, if it was important enough to the *Order* to consider the *MAP 2010 Ex Parte* and the *Jurison Comments* to the degree that it did, it was arbitrary and capricious to rush to judgment before soliciting a full set of comments from all interested parties. Media Bureau should have followed the normal order of business. Second, the large variance between NPR's conclusions and the those of MAP and Jurison proves the need to thoroughly test the study results, though the usual process of orderly comment and reply.<sup>60</sup> As the Court has repeatedly pointed out, "By requiring the 'most critical factual material' used by the agency be subjected to informed comment, the APA provides a procedural device to ensure that agency regulations are tested through exposure to public comment, to afford affected parties an opportunity to present comment and evidence to support their positions, and thereby to enhance the quality of judicial review."<sup>61</sup>

33. Here, had Media Bureau followed the normal order of business, they would have built a record showing that the joint proposal of NPR and iBiquity put their business interests ahead of the public interest. There is no logical nexus between the joint proposal and the experimental data and technical findings of the AICCS report, and as a result, broadcasters and listeners alike will needlessly suffer harmful interference. We have suffered prejudice by Media

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<sup>59</sup> See, e.g., *Order* at 15 and Fn. 29.

<sup>60</sup> Subsequently, NPR fired back an *ex parte* rebuttal to the *ex parte* comments, January 28, 2010 (<http://fjallfoss.fcc.gov/ecfs/document/view?id=7020384263>), and an obviously frustrated Jurison filed a "petition for reconsideration and response to NPR comments", February 28, 2010, (<http://fjallfoss.fcc.gov/ecfs/comment/view?id=6015539683>), both on MM Docket No. 99–325. I submit that this is neither an orderly nor appropriate process of comment and reply, and it does not evidence the excellence in government to which the Commission aspires.

<sup>61</sup> *American Radio Relay League, Inc. v. FCC, Id.*, at p. 13, citing a string of precedent.

Bureau’s failure to provide an opportunity for public comment on the most critical factual material informing their decision.

34. Although it not the purpose of this application to provide technical comments on the AICCS report, a summary might be in order here to demonstrate what orderly public comments would elucidate. On the subject of adjacent channel interference, the principal finding of the study is that it requires a D/U ratio of 6 dB to avoid harmful interference with –20 dBc digital power, a D/U ratio of 8.9 dB to avoid harmful interference with –14 dBc digital power, and a D/U ratio of 10 dB to avoid harmful interference with –10 dBc digital power.<sup>62</sup> It is not a coincidence that the study concluded that a D/U ratio of 6 dB (the current regulatory standard) mitigates the effects of –20 dBc digital power (heretofore the regulatory standard). The data were interpreted to make it come out that way, by arbitrarily setting a MOS of 2.7 as the threshold for harmful interference.<sup>63</sup> Regardless, this principal finding provides no rational basis to conclude that digital power can be increased to –14 dBc with current 6 dB protection contours without creating harmful interference. Indeed, it flatly states the opposite, that harmful interference would occur *within* the 6 dB D/U contour, up to the 8.9 dB D/U contour.

#### **IV. THE COMMISSION MUST DECIDE TWO PETITIONS FOR RECONSIDERATION PRIOR TO DECIDING THIS MATTER**

##### **A. Background**

35. Following the release of the *Second Report and Order* in 2007, two petitions for reconsideration (PFRs) were received, pursuant to § 1.429 of the Commission’s rules.<sup>64</sup> One,

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<sup>62</sup> Report to the CPB and FCC on the Advanced IBOC Coverage and Compatibility Study, November 3, 2009, p. 30; <http://fjallfoss.fcc.gov/ecfs/comment/view?id=6015395377>.

<sup>63</sup> Had the passing score been set by the study design in advance, the meaning of the words would have counseled that anything less than an MOS of 3.0—“Fair” on a scale of “Bad, Poor, Fair, Good, and Excellent”—would have evidenced harmful interference. However, this would have required D/U ratios for interference protection about 2 dB greater.

<sup>64</sup> 73 FR 4572; FCC Report No. 2847, January 18, 2008.

from New America Foundation, et al., argued *inter alia* that the *Second Report and Order* erred by giving away additional spectrum to incumbent broadcasters for digital services, rather than allowing others (such as themselves) to compete for it (e.g., under the auction authority of Section 309(j) of the Communications Act) for alternative use (such as low-power FM).<sup>65–66</sup> I filed the other.<sup>67</sup> It argued that the *Second Report and Order* erred by permanently authorizing IBOC broadcasting even though iBiquity had reneged on their commitment to a complete and open standard. Following the initial authorization of digital broadcasting in the *First Report and Order*, iBiquity developed and deployed a digital encoding scheme named “HDC” that was never authorized by the Commission. Unlike the encoding scheme that was used in the IBOC prototype equipment “as tested,” iBiquity asserts that HDC is a trade secret. My PRF demonstrates that the Commission cannot adopt a digital broadcasting system for which the technical specification is secret. Doing so violates numerous legal and policy requirements, up to and including the Patent Clause of the U.S. Constitution, which prohibits the Federal Government from granting monopoly privileges that last indefinitely. In an attempt to be accommodating, my PFR did not demand the immediate cessation of digital broadcasting. Rather, it merely asked that the further rollout of IBOC broadcasting be suspended until such time as a path forward had been determined—be it full and complete documentation of the IBOC system as deployed, including HDC, or reversion through software updates to a digital encoding scheme that the Commission had actually authorized and permits through its rules.

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<sup>65</sup> Petition for Reconsideration of New America Foundation, et al., MM Docket No. 99–325, September 14, 2007; at <http://fjallfoss.fcc.gov/ecfs/document/view?id=6519724188>.

<sup>66</sup> Disclaimer: Nothing in this Application for Review should be interpreted as representing this matter before the Commission. It is mentioned here only to point out that there exists a second PFR similarly situated to mine.

<sup>67</sup> Petition for Reconsideration of Jonathan E. Hardis, MM Docket No. 99–325, July 9, 2007; electronically at <http://fjallfoss.fcc.gov/ecfs/document/view?id=6519550109>.

36. Oppositions and Replies to Oppositions of these PFRs were heard between February 11 and February 22, 2008. They may be found on the ECFS for MM Docket No. 325 in this date range. I note that this predates the Joint Parties petition by 3 ½ months.

37. In comment on the instant matter, I twice pointed out to Media Bureau the nexus between the current issues and my PFR.<sup>68</sup> No reply comment disputed it.

**B. Discussion**

38. If, despite overwhelming evidence to the contrary, the Commission determines that the *Order* was (1) within the delegated authority of Media Bureau and (2) properly adopted, then we arrive at the issue in which I am most aggrieved. Section 405 of the Communications Act (47 U.S.C. 405) establishes procedures for reconsideration of Commission decisions. It requires that the Commission be given an opportunity to pass on questions of fact and law as a precondition to judicial review, and it contemplates that the Commission will take action within 90 days of filing of a petition for reconsideration. In my case, more than two years have passed since opposition and reply concluded.

39. I should emphasize that I believe that the Commission can satisfactorily resolve my complaint without the need for judicial review. Given the clear facts and law, the Commission should be able expeditiously to give iBiquity and its client broadcasters the choice of three options: come forward with a complete and open technical standard that includes HDC, abide by the specifications in § 73.404 of the Commission's rules, or take digital broadcasting off the air. Even in the unlikely event that the Commission might decide the matter otherwise, a well reasoned analysis could defuse the need to seek judicial relief. This, after all, is the purpose of Sec. 405, to preserve the integrity of the administrative process and to conserve judicial resources.

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<sup>68</sup> Comments of Jonathan E. Hardis, November 28, 2008, at 5 <http://fjallfoss.fcc.gov/ecfs/document/view?id=6520189359>; Reply Comments of Jonathan E. Hardis, July 17, 2009, at 4, <http://fjallfoss.fcc.gov/ecfs/document/view?id=7019917257>; both MM Docket No. 99–325.

40. While Sec. 405 requires me to give the Commission the “opportunity” to pass on questions of fact and law, it does not require me to wait indefinitely.<sup>69</sup> More to the point, should the Commission allow the *Order* to go into effect, it will provide clear evidence that I have exhausted my administrative remedies. The “reopener doctrine” (a.k.a. “reopening doctrine”) allows judicial review when an agency has, either explicitly or implicitly, reexamined its prior position. Here, Media Bureau reexamines § 73.404 and, with the purported authority of the Commission, decides against the arguments of both PFRs. In response to arguments that the Commission has wrongly allocated new spectrum, Media Bureau allocates up to ten times more of it. In response to arguments that the process of deciding IBOC specifications had derailed, requiring intervention and repairs, Media Bureau concludes that there is no issue and that the train is not moving fast enough.<sup>70</sup> It makes no difference that Media Bureau was ruling in a proceeding involving other parties.<sup>71</sup> It completed—purposefully or not, and with explanation or not—actual reconsideration of the Commission’s prior positions, the text of § 73.404, and issues in the PFRs. I bring this to the Commission’s attention under § 1.115(b)(2)(ii) (“The action involves a question of law or policy which has not previously been resolved by the Commission”) to verify that this is what the Commission intends. If it is not, then the Commission must, at a minimum, immediately stay the *Order* until such time as it has completed its review of the PFRs.

41. I reiterate again that the goal here is not to challenge the Commission in court. The goal is to see to it that the U.S. digital radio broadcasting system becomes fully documented and no longer secret. In this way citizens, such as myself, will enjoy full competition in the design and commerce of receiving equipment, just as we do now for all other broadcast services,

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<sup>69</sup> *Southwestern Bell Telephone Co. v. FCC*, C.A. 8<sup>th</sup>, 1998, 138 F.3d 746, 750

<sup>70</sup> *Order* at 13, noting that a key reason for taking action was that the rate of conversions to digital broadcasting had dropped significantly over the past two years

<sup>71</sup> *Petroleum Communications, Inc. v. FCC*, C.A.D.C. 1994, 22 F.3d 1164, 1170

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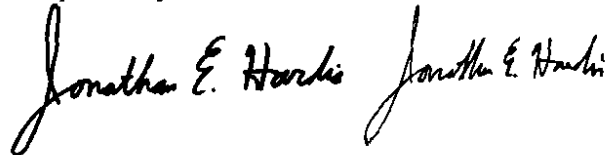
including digital television. Full competition, as always, will lead to lower prices, new and innovative features, and improved performance. Indeed, it is more than likely that had full competition been in place since the beginning of digital broadcasting, we would not be having this argument today about a brute-force power increase to compensate for poor receivers.

42. The Commission has set ambitious goals for itself, to make a break from errors of the past, to overhaul the way it interacts with citizens, and to establish itself as a model of excellence in government. One place to begin is here. It would be a failure if the Commission cannot resolve my underlying complaint administratively, and in short order. Furthermore, in accepting this application for review, the Commission can reinvigorate the digital radio proceeding with technical and procedural excellence.

## V. CONCLUSION AND RELIEF SAUGHT

43. For the foregoing reasons, the Commission should grant this Application for Review. The Commission should: (1) vacate the *Order*, (2) remand the power increase issue back to Media Bureau with instructions to solicit public comment on the AICCS report and to propose Commission action, and (3) take no further action on a power increase, if warranted, until an enforceable path forward is set for complete disclosure of IBOC specifications.

Respectfully submitted,

The image shows a handwritten signature in black ink. The signature is written in a cursive, flowing style. It appears to read 'Jonathan E. Hardis' twice, with the second instance being a lighter, more ghost-like version of the first. The signature is positioned above the printed name and address.

Jonathan E. Hardis  
356 Chestertown St.  
Gaithersburg, MD 20878-5724

Dated: April 8, 2010

## CERTIFICATE OF SERVICE

I, Jonathan E. Hardis, hereby certify that true and correct copies of the foregoing *Application for Review* were sent this 8<sup>th</sup> day of April, 2010, via the ECFS and first class mail, postage prepaid, to:

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Original and 9 copies, pursuant to § 1.419, to:

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